

BOYCHENKO, Ye.A.; SAYENKO, G.N.

Enzymatic reduction of carbon dioxide. Fiziol.rast. 6 no.6:  
719-721 N-D '59. (MIRA 13:4)

1. V.I.Vernadsky Institute of Geochemistry and Analytical  
Chemistry, U.S.S.R. Academy of Sciences, Moscow.  
(Photosynthesis)

SAYENKO, G.N.

Primary products of photosynthesis and methods of isolating them. Fiziol. rast. 7 no. 5:605-607 '60. (MIRA 13:10)

1. V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry, U.S.S.R. Academy of Sciences, Moscow.  
(Photosynthesis) (Plants--Chemical analysis)

BOYCHENKO, Ye.A.; SAYENKO, G.N.

Enzymatic photoreduction of carbon dioxide. Dokl.AN SSSR 138 no.6:  
1453-1455 Je '61. (MIRA 14:6)

1. Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo  
AN SSSR. Predstavleno akademikom A.P.Vinogradovym.  
(Carbon dioxide) (Reduction, Chemical) (Enzymes)

20429

S/020/61/141/003/018/021  
B103/B101

5.5450

27.1110

AUTHORS: Boychenko, Ye. A., and Sayenko. G. N.

TITLE: Study of the product of fermentative reduction of carbonic acid in plants by the alkaline hydrolysis method

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 3, 1961, 737 - 739

TEXT: The authors studied CO<sub>2</sub> reduction in the presence of a ferment isolated from the leaves of white clover (*Trifolium repens*) which contains flavin adenine dinucleotide, Fe, and Mn in its active group. Thus, an explanation of direct data of the chemical nature of hydroxy acid containing phosphorus and glycerin was attempted. In photosynthesis, this acid should be the first product of CO<sub>2</sub> reduction. Experiments were conducted at 500 lux and 20° C in air containing 3% of CO<sub>2</sub> labeled with 0.08% C<sup>14</sup>O<sub>2</sub>. 100 mg of the ferment preparation purified from foreign substances which can be precipitated with acetone ("complex") was used for each experiment; or, the preparation also contained hemoproteins, especially catalase ("acetone deposit"). The latter variation yielded better chromatographical results. After Card 1/84

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B103/B101

Study of the product of fermentative...

the experiment, the preparation was frozen at dry-ice temperature. Next, 1/3 of it was benzoylated according to Schotten-Baumann, from the second third a barium salt of the product was formed, and the last third was subjected to mild, alkaline hydrolysis: 100 mg was hydrolyzed for 20 min at 37°C in 7.5 milliliters of ethanol, 0.65 milliliters of water, and 0.125 milliliters of 1N NaOH. Fatty acids were thus removed from phospholipids. The residue consisted of various water-soluble molecular components, mainly the corresponding phosphoric esters (Ref. 4, see below). They were further separated by paper chromatography. After hydrolysis, the mixture still has to be alkaline. It was then neutralized with 0.4 milliliters of ethyl formate, and left standing for 5 min at 37°C. After desiccation in vacuo at 60°C, the product was one-dimensionally chromatographed with wedge-shaped paper in butanol + acetic acid, or methanol + formic acid mixtures. After benzoylation, hydroxy acid shows up in a spot when chromatographed in chloroform + methanol; its homogeneity is thus confirmed. Its barium salt also forms a spot in a one-dimensional chromatogram in butanol + acetic acid with  $R_f = 0.12$ . After alkaline hydrolysis, the product is separated into (a) a molecular residue containing phosphorus, and (b) two fatty acids. The former was identified as glycerophosphoryl ethanol amine. Glycerophosphoryl choline, plasmogenes, phenols, and other substances proved to be

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Study of the product of fermentative...

absent. Fatty acids, a component of phosphatide, are probably a preliminary stage of carbohydrate formation. In iodine vapor, the spot of the primary product clearly starts to react for carbohydrates. When three times chromatographed in butanol + acetic acid, one of the fatty acid separates from phosphatide barium salt even without hydrolysis, and a new spot forms which in wedge-shaped chromatograms and with ninhydrin reacts positively for phosphorus. This spot was identified as lysophosphatidyl ethanol amine, and decomposed into glycerol phosphoryl ethanol amine and fatty acids by complete hydrolysis. Other decomposition products, glycerol, phosphoric acid, and ethanol amine can be formed by various hydrolysis methods. Fe which forms part of phosphatidyl ethanol amine is of great importance. The absorption of  $\text{CO}_2$  by the complex depends on the Fe amount contained therein. Further  $\text{CO}_2$  reduction and the distribution of  $\text{C}^{14}$  are also closely related to Fe.

Binding of Fe to the acids in the molecule is most probable, possibly according to the type of acyloxy derivatives of some transition metals. The labeled C is to be detected at first in the carboxyl groups. Fermentative  $\text{CO}_2$  reduction is complicated and by no means a simple reversal of known respiratory reactions, since  $\text{C}^{14}$  in this redox reaction is the first sub-  
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B103/B101

Study of the product of fermentative...

stance to be detected in phosphatidyl ethanol amine. This agrees with data on the chemical nature of photosynthesis by oxygen isotopes. The decomposition course is shown in a diagram. There are 1 figure, 2 tables, and 12 references: 7 Soviet and 5 non-Soviet. The references to English-language publications read as follows: R. Dawson, Biochem. J., 75, 45 (1960); M. Kates, Biochim. et biophys. acta, 41, 315 (1960); M. Kates, A. Aulinson, A. James, Biochim. et biophys. acta, 48, 571 (1961) M. Matsumoto J. Biochem. (Tokyo), 49, 32 (1961).

ASSOCIATION: Institut geokhimii i analyticheskoy khimii im. V. I. Vernadskogo Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences USSR)

PRESENTED: June 27, 1961 by A. P. Vinogradov, Academician.

SUBMITTED: June 24, 1961

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BOYCHENKO, Ye. A.; SAYENKO, G.N.

Stabilization of primary products of carbon dioxide reduction. *Fiziol. rast.* 8 no.2:241-243 '61. (MIRA 14:3)

1. V.I. Vernadskiy Institut Geochemistry and Analytical Chemistry,  
U.S.S.R., Academy of Sciences, Moscow.  
(Photosynthesis)



SAYENKO, G. M., BOYCHENKO, YE. A., (USSR)

"A Carbon Dioxide-Reducing Lipoflavoprotein  
from Plants."

Report presented at the 5th Int'l. Biochemistry Congress,  
Moscow, 10-16 Aug 1961.

KUZIN, A.M.; KRIUKOVA, L.M. [Kryukova, L.M.]; SAENKO, G.N. [Sayenko, G.N.];  
IAZIKOVA, V.A. [Yazykova, V.A.]

Under irradiation action forming in plants of some substances  
which slow down the cell division, growth and development of  
plants. Analele biol 14 no.1:27-31 Ja-Mr '60.

SAYENKO, G.N.; ZARIN', V.E.; BOYCHENKO, Ye.A.

Formation of photosynthetic peroxide during the reduction of  
carbon dioxide in plant leaves. Fiziol.rast. 12 no.6:998-1004  
N-D '65. (MIRA 18:12)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.  
Vernadskogo AN SSSR, Moskva. Submitted January 11, 1965.

ACCESSION NR: AP4039596

S/0126/64/017/005/0689/0692

AUTHOR: Sayenko, G. P.

TITLE: The effect of neutron radiation on the magnetic moment of the alloy  $\text{Fe}_3\text{Al}$

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 5, 1964, 689-692

TOPIC TAGS: neutron radiation, magnetic moment, iron aluminum alloy/ RFT nuclear reactor

ABSTRACT: A solid solution of aluminum in iron, approaching the composition of  $\text{Fe}_3\text{Al}$ , is ferromagnetic. To investigate the connection between the magnetic moment and the orderliness of the alloy structure, differently prepared alloys were subjected to nuclear bombardment. The alloy of iron with 24.8 at % of aluminum (impurities: C~0.02% and Si + Mn~0.2%) was prepared in the three following ways: 1) ordered in the  $\text{Fe}_3\text{Al}$  type, obtained by slow cooling of the samples in the temperature interval 550-250C; 2) ordered in the  $\text{FeAl}$  type, obtained by quenching the samples at 750C in oil; 3) disordered, obtained by cold rolling of samples with an 89% reduction (before rolling, the alloy was annealed for 2 hours at 900C in an atmosphere of hydrogen). The magnetic moment  $\delta$  was determined by measuring the

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ACCESSION NR: AP4039596

force  $f$  on a sample of weight  $p$  in a magnetic field gradient  $\frac{dH}{dx}$  from the formula  $\frac{f}{p} = \delta \frac{dH}{dx}$ . The samples were limited to 5 mg to reduce residual radiation and to insure the constancy of  $\frac{dH}{dx}$ . The gradient of 6700 oersteds field was calibrated, using a standard of Armco iron ( $\delta_s = 217.7$  gaus/gram). The alloy was irradiated in the active zone of an RFT reactor with a neutron flux of  $7 \cdot 10^{19}$  n/cm (fast neutrons) at  $\sim 80^\circ\text{C}$ . The results showed that the higher-ordered alloys had a lower  $\delta_s$ . This quantity was increased when the irradiation disrupted the orderliness, and was decreased when the alloy became more ordered. This effect was explained by a change in the crystal structure. The specimen slowly cooled below  $560^\circ\text{C}$  was well ordered. It was body-centered cubic, with iron atoms at all vertices and iron and aluminum atoms alternating at the cube center. Above  $560^\circ\text{C}$  quick cooling produced a less ordered crystal (FeAl type) with iron at all vertices, but the aluminum and iron at the centers were randomly disposed. In the ordered structure the aluminum and iron atoms pair, with some valence electrons from the aluminum passing over to the unfilled  $3d$  shell of the nearest iron. This reduces the magnetic moment of free iron paired with aluminum from  $2.14 \pm 0.01 \mu\text{b}$  to  $1.46 \pm 0.01 \mu\text{b}$ . In disordered alloys the internal energy of the alloy is higher, and its thermodynamic stability is lower. The author thanks S. T. Konobeyevskiy for his discussion of the work.

Orig. art. has: 1 table.

Card 2/3

ACCESSION NR: AP4039596

ASSOCIATION: Institut atomnoy energii im. I. V. Kurchatova (Atomic Energy Institute)

SUBMITTED: 24Jun63

ENCL: 00

SUB CODE: MM, NP

NO REF SOV: 001

OTHER: 009

Card 3/3

SAYENKO, G. P.

"deistviye Neitronnovo Obluchenniya Na Uporyadochivayushchiysya  
SPLAV Fe<sub>3</sub> Al"

Report presented at the Symposium on Radiation Damage in Solids  
and Reactor Materials (IAEA) Venice, 7-11 May 1962.

Ordena Lenina Inst. Atomnoy Energii im. I. V. Kurchatova  
Akademiya Nauk SSSR.

SAYENKO, G. P.

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PHASE I BOOK EXPLOITATION

SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences  
USSR, Resp. Ed.

Deystviye vadernykh izlucheniy na materialy (The Effect of  
Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR,  
1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. P. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

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SOV/6176  
The Effect of Nuclear Radiation (Cont.)

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research organization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense  $\gamma$ -radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

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The Effect of Nuclear Radiation (Cont.)

SOV/6176

Astrakhontsev, S. M., and Yu. I. Konnov. Effect of Neutron Irradiation on Inhomogeneous Solid Solutions 121  
Specimens of X20H80 [Ni80Cr20] alloy were irradiated at a temperature not exceeding  $100^{\circ}$  [C?] by a thermal neutron flux of  $1 \cdot 10^{17}$  to  $1.4 \cdot 10^{20}$  n/cm<sup>2</sup>.

Sayenko, G. P. Effect of Neutron Irradiation on Ordering Fe<sub>3</sub>Al Alloy 127  
Specimens were irradiated by fast neutrons and measurements were made of electric resistance, lattice parameters, and the intensity of superlattice lines.

Ivanov, A. N., and N. F. Pravdyuk. Effect of Neutron Irradiation on Electrical Resistance in Certain Metals 136

Pravdyuk, N. F., and P. A. Platonov. Study of Long-Time Strength of Copper After Irradiation 153  
The investigation was conducted before and after irradiation with a neutron flux of  $\approx 10^{20}$  n/cm<sup>2</sup>.

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L 8568-66 EPF(n)-~~2~~EWA(h)/EWA(c)/EWT(m)/T/EWP(b)/EWP(t) IJP(c) GG/JD

ACC NR: AT5023790

SOURCE CODE: UR/0000/62/000/000/0127/0135

AUTHOR: Sayenko, G. P.

ORG: none

TITLE: Effect of neutron irradiation on an Fe<sub>3</sub>Al ordered alloy

SOURCE: Soveshchaniye po probleme deystviye yadernykh izlucheniya na materialy. Moscow, 1960. Deystviye yadernykh izlucheniya na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 127-135

TOPIC TAGS: iron alloy, aluminum containing alloy, ordered alloy, alloy resistivity, alloy lattice constant, alloy neutron irradiation, neutron irradiation effect

ABSTRACT: Specimens of an Fe<sub>3</sub>Al alloy containing 24.8 at% Al, in the form of 0.2-mm-thick strip cold rolled with a reduction of 6.5 and 89% and forged rods 8 mm in diameter, were neutron irradiated in the as-is condition and after heat treatment to obtain alloys, in the ordered (annealed) or disordered (annealed and quenched) condition. The samples were irradiated with an integrated flux of  $0.7 \times 10^{20}$  or  $1.35 \times 10^{20}$  n/cm<sup>2</sup> at about 80C. The alloy structure was investigated by electrical resistivity measurements at 20 and 50C, and by the x-ray

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ACC NR: AT5023790

diffraction method. Irradiation changed the initial resistivity of the alloy in all the investigated conditions. As the flux increased to  $1.35 \times 10^{20}$  n/cm<sup>2</sup>, the resistivity of the ordered alloy increased by 30% and that of the disordered decreased by about 8%. In the cold-rolled alloy the resistivity increase was linear and continuous with practically the same relative magnitude in specimens with the 6.5 or 89% reduction. The resistivity of ordered and disordered alloys in the initial (unirradiated) conditions, 108.0 and 151.0  $\mu\text{ohm}\cdot\text{cm}$ , respectively, changed at different rates, but after exposure to an integrated flux of  $1.35 \times 10^{20}$  n/cm<sup>2</sup>, they were close to each other: 1400 and 138.2  $\mu\text{ohm}\cdot\text{cm}$ , respectively. X-ray examination of unirradiated alloys showed an almost complete ordering in the atom distribution of the annealed alloy, a partial ordering in the quenched alloy, and none in the cold-rolled alloy. Irradiation with an integrated dose of  $0.7 \times 10^{20}$  and  $1.35 \times 10^{20}$  n/cm<sup>2</sup> eliminated both the full and partial ordering. As the irradiation dose increased from zero to  $0.7 \times 10^{20}$  and  $1.35 \times 10^{20}$  n/cm<sup>2</sup>, the lattice constant of the ordered alloy increased from 2.8901 to 2.8975 and 2.8996 kX, respectively. The corresponding figures for the disordered alloy were 2.8939, 2.8996, and 2.9005 kX. Under identical irradiation conditions, the lattice constant of the cold-rolled alloy decreased from 2.9000 to 2.8966 and 2.8953, respectively.

SUB CODE: MM, SS/ SUBM DATE: 18Aug62/ ORIG REF: 001/ OTH REF: 008

Cord 2/2

ZINOV'YEV, A.; SAYENKO, I.; BOBROV, O.

Drilling underwater blastholes in rock. Rech. transp. 20  
no.12:41-42 D '61. (MIRA 14:12)

(Dredging)  
(Rock drills)

1. SAYENKO, I.
2. USSR (600)
4. Welding
7. Salvaging of cast iron parts. Tekh.molod. 20 no.9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

SAYENKO, I.

New technique for repairing thin-walled cast-iron automobile parts.  
Muk.-elev.prom. 20 no.8:25-26 Ag '54. (MIRA 7:9)  
(Cast iron--Welding) (Automobiles--Repairing)

*SAYENKO, I.*

SAYENKO, I.

Improving the technology of welding thin-walled cast iron parts.  
Avt.transp.32 no.12:20-22 D '54. (MIRA 8:3)  
(Automobiles--Engines) (Cast iron--Welding)



SAYENKO, I. G.

USSR/ Engineering - Welding

Card 1/1 ; Pub. 128 - 19/31

Authors ; Saenko, I. G.

Title ; The welding of flaws on thin-walled cast-iron components

Periodical ; Vest. mash. 10, 81 - 83, Oct 54

Abstract ; Methods of torch welding of flaws on thin-walled (from 1.5 to 10 mm) cast-iron components are described and drawings, depicting the welding operation and the disposition of individual components, are given. Illustration.

Institution : ....

Submitted : ....

SAYENKO, I.G.; MITIN, V.I.; LIBERIS, V.V.

Rapid welding in carbon dioxide with large diameter electrode wires.  
Avtom svar. 17 no.3:65-66 Mr '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy  
promyshlennosti.

SAYENKO, K.

"Story of a great physiologist." A.N.Studitskii. Reviewed by K.Saenko.  
Nauka i zhizn' 20 no.6:45-46 Je '53. (MLRA 6:6)  
(Pavlov, Ivan Petrovich, 1849-1936) (Studitskiy, A.N.)

SAYENKO, K.

In the "capital" of conditioned reflexes. Nauka i zhizn' 20 no.9:29-32 S '53.

(MIRA 6:11)

(Conditioned response)

IVANITSKIY, YE., SAYENKO, K.

Hydroelectric Power Stations

At the foot of "Mogutova" Hill. Nauka i zhizn' 19 No. 5 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952, 2. Unclassified.

SAYENKO, K.

USSR/Agriculture - Exposition

Card 1/1 : Pub. 77 - 3/21

Authors : Saenko, K.

Title : Main pavilion - at the Agricultural Exhibit in Moscow

Periodical : Nauka i zhizn' 21/9, 8-10, Sep 1954

Abstract : A propaganda article dealing with the main pavilion at the Agricultural Exposition in Moscow. Illustrations.

Institution : .....

Submitted : .....

GROMOV, L.; SAYENKO, K.

Lights on the Angara. Okh.truda i sots.strakh. no.1:21-29 Ja  
'60. (MIRA 13:5)  
(Bratsk Hydroelectric Power Station)

IVANOVICH, Leonid Stepanovich; SAYENKO, Konstantin Ivanovich;  
MEDVEDEVA, L.V., red.; SHADRINA, N.D., tekhn. red.

[Stories on activists in industrial safety] Rasskazy ob aktivistakh okhrany truda. Moskva, Izd-vo VTsSPS, Profizdat, 1961.  
110 p. (MIRA 15:1)

(Industrial hygiene)



S/056/62/043/005/003/058  
B163/B186

AUTHORS: Lobashov, V. M., Nazarenko, V. A., Sayenko, L. F.

TITLE: Determination of the spin of  $\text{Eu}^{152\text{m}}$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,  
no. 5(11), 1962, 1579-1581

TEXT: The  $\beta$ - $\gamma$  correlation between the momentum of the  $\beta$ -electron and the circular polarization of the 1.327 Mev  $\gamma$  quantum in the allowed branch of the  $\text{Eu}^{152\text{m}}$   $\beta$ -decay with a  $\beta$ -electron end-point energy of 560 kev is measured. This  $\beta$ -decay, whose frequency of occurrence among all decays of  $\text{Eu}^{152\text{m}}$  is 1.2%, leads to the 1.315 Mev excited  $1^-$  state of  $\text{Gd}^{152}$ . The measurements were made with an apparatus described earlier (V. M. Lobashov et al., ZhETF 41, 1433, 1961), then used for investigating the similar  $\text{Pr}^{144}$  decay by an analogous experimental procedure. The  $\text{Eu}^{152\text{m}}$  source was made of about  $100\mu\text{g}/\text{cm}^2$  europium oxide on an Al backing foil, irradiated in the FTI AN SSSR reactor. The value of  $\Delta = 2(I_1 - I_2)/(I_1 + I_2)$

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Determination of the spin of  $\text{Eu}^{152\text{m}}$

S/056/62/043/005/003/058  
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is found to be  $+(1.6 \pm 0.4)\%$  where  $I_{1,2} = R_{\text{coinc}}/R_{\mu}\theta_{\beta}$ ;  $R_{\text{coinc}}$  and  $R_{\mu}$  denote the counting rates for coincidences and single pulses of the  $\mu$  channel respectively, and  $\theta_{\beta}$  is a correction factor for the influence of the magnetic field on the  $\beta$ -channel (0.03%). The subscripts 1 and 2 respectively correspond to different magnetization directions in the polarimeter. From this, the correlation coefficient  $A_1$  is calculated taking into account the background of casual coincidences; also the geometry and the efficiency of the  $\mu$  polarimeter;  $A_1 = +(0.40 \pm 0.10)$ . For the transitions  $0^- \xrightarrow{\beta} 1^- \xrightarrow{\gamma} 0^+$  a correlation coefficient of +1.00 is to be expected, but for the transitions  $1^- \xrightarrow{\beta} 1^- \xrightarrow{\gamma} 0^+$  a correlation coefficient of the observed magnitude is possible. It is concluded that spin and parity of the  $\text{Eu}^{152\text{m}}$  isomeric state are  $1^-$  instead of the previously accepted value  $0^-$ . The reliability of the applied experimental procedure is confirmed by the fact that  $\beta\gamma$ -correlation measurements in the  $\beta$  decays of  $\text{Co}^{60}$  and  $\text{Au}^{198}$  (V. M. Lobashov et al., ZhETF 42, 358, 1962)

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Determination of the spin of  $\text{Eu}^{152\text{m}}$

S/056/62/043/005/003/058  
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have given results in good agreement with those of other authors. It is important to know the spin and parity of the  $\text{Eu}^{152\text{m}}$  isomeric state in connection with the experiment of Goldhaber et al. (Phys. Rev. 109, 1015, 1958) whereby the polarization of the neutrino from the K decay was measured. Goldhaber's main result i. e. his conclusion on the chirality of the neutrino, is not affected, but the expected greater accuracy from further such experiments with  $\text{Eu}^{152\text{m}}$  to determine the polarization of the neutrino is diminished. There is 1 figure. ✓

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: April 28, 1962

Card 3/3

KAMENETZ, D. M.; LOBASHOV, V. M.; NAZARENKO, V. A.; SAYENKO, L. F.; KHARKEVICH, G. I.;  
YEROKOV, A. I.

"Relative Measurements of the Longitudinal Polarization of Electrons in Beta  
Decay of  $P^{32}$  and  $Zn^{114}$ ,  $Ho^{166}$  and  $Re^{186}$ ."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

FTI (Physico Technical Inst)

L 16097-65 EWT(m) DIAAP/ESD(c)/ESD(gs)/ESD(t)/SSD/AFWL/ASD(a)--5/PAEM(a)  
ACCESSION NR: AP5000311 S/0056/64/047/005/1668/1670

AUTHORS: Kaminker, D. M.; Lobashov, V. M.; Nazarenko, V. A.;  
Sayenko, L. F.; Kharkevich, G. I.; Yegorov, A. I.

TITLE: Relative measurement of the longitudinal polarization of  
electrons in Beta decay 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,  
no. 5, 1964, 1668-1670

TOPIC TAGS: beta decay, electron polarization, electron energy,  
circular polarization, bremsstrahlung, nuclear structure

ABSTRACT: To check on the hypothesis advanced to explain some  
anomalies in the longitudinal polarization of electrons, namely  
that the internal structure of the nucleus gives rise to higher-  
order corrections, the authors attempted to ascertain the dependence  
of these anomalies on the electron energy. To this end, relative

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ACCESSION NR: AP5000311

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measurements of the longitudinal polarization of electrons were measured in  $\beta$  decay of  $P^{32}$ ,  $In^{114}$ ,  $Pr^{142}$ ,  $Ho^{166}$ , and  $Re^{188}$  at energy  $E\beta \approx 1250$  keV. The experiments consisted of measuring the circular polarization of the bremsstrahlung produced by deceleration of the  $\beta$  electrons in a lead target, using the setup shown in Fig. 1 of the enclosure. The circular polarization of the bremsstrahlung  $\gamma$  quanta of the  $\beta$  electrons of  $In^{114}$ ,  $Pr^{142}$ ,  $Ho^{166}$ , and  $Re^{188}$  was compared with the circular polarization of the bremsstrahlung  $\gamma$  quanta of  $P^{32}$   $\beta$  electrons. The electron energy was determined with the aid of a magnetic lens spectrometer. The values obtained for the longitudinal polarization relative to that of  $P^{32}$  were  $0.960 \pm 0.0015$ ,  $0.934 \pm 0.015$ ,  $0.942 \pm 0.015$ , and  $1.005 \pm 0.016$  for  $In^{114}$ ,  $Pr^{142}$ ,  $Ho^{166}$ , and  $Re^{188}$  respectively. The observed increase in the deviation of the longitudinal polarization of the electrons from  $-v/c$  with decreasing total energy of the electrons (in almost linear fashion) does not contradict the hypothesis of the influence of internal structure of the nucleus. The observed deviations in the

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L 16096-65

ACCESSION NR: AP5000311

6

longitudinal polarization do not correlate with available data on the form of the  $\beta$  spectra of the corresponding transitions. "The authors thank V. A. Knyaz'kov, V. B. Belyakov, V. P. Lapin, and G. D. Chuklin for help in preparing the apparatus and measurements, and also A. N. Timokhin for participating in preparation of the  $p^{32}$  and  $In^{114}$  sources." Orig. art. has: 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR)

SUBMITTED: 23May64

ENCL: 01

SUB CODE: NP

NK REF SOV: 004

OTHER: 002

Card 3/4

L 16096-65  
ACCESSION NR: AP5000311

ENCLOSURE: 01

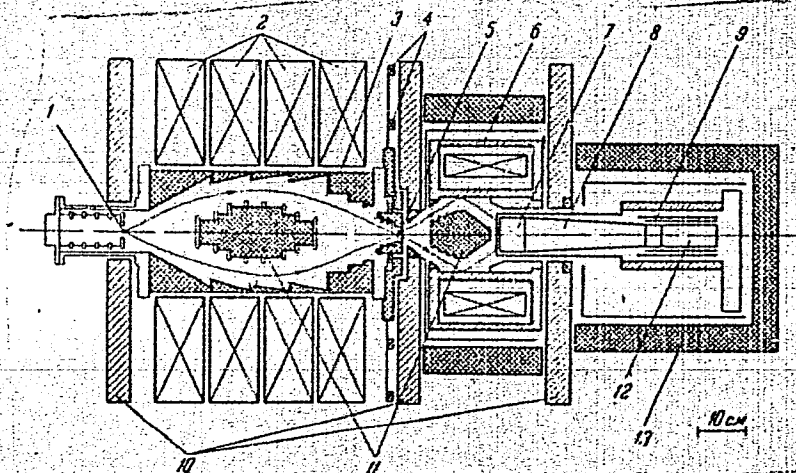


Fig. 1. Schematic diagram of installation. 1 - Source, 2 - magnetic-spectrometer coil, 3 - vacuum chamber, 4 - compensation coils, 5 - lead target, 6 - gamma polarimeter, 7 - NaI(Tl) crystal, 8 - light pipe, 9 - permalloy screens, 10 - Armco screens, 11 - lead screens, 12 - photomultiplier, 13 - lead shield

Card 4/4



SAYENKO, L.F.; YEGOROV, A.I.; IGNATENKO, Ye.I.; MOSKALEV, P.N.

Production of In<sup>114</sup>\* preparations of high specific activity. Izv.  
AN SSSR. Ser. fiz. 29 no.7:1236 J1 '65. (MIRA 18:7)

*SAYENKO, M.M.*

SAYENKO, M.M.

Two-year supply of forage. Nauka i pered. op. v sel'khoz. 7 no.10:  
18-20 0 '57. (MIRA 10:11)

1. Sekretar' Novo-Pokrovskogo raykoma Kommunisticheskoy Partii  
Ukrainy.

(Feeding and feeding stuffs)

SI YENKO, M.V.

Organizational and technological practices in welding and  
assembling operations. Stroi. truboprov. 8 no.12:6 D '63.  
(MIRA 17:4)

1. Trest Nefteprovodmontazh, Ufa.

OPOKA, G.V., fel'dsher (Mliniski, L'vovskaya oblast'); SAYENKO, N.A.,  
akusherka (Mliniski, L'vovskaya oblast')

How we care for children in the first year of life. Fel'd.  
i akush. 28 no.6:49 Je'63. (MIRA 16:8)  
(L'VOV PROVINCE—INFANTS—CARE AND HYGIENE)

SAYENKO, N. F.

USSR/Medicine - Yeast  
Medicine - Fermentation

"Yeast Isolated from the Sherry Film," A. M. Frolov-Bagleyev, N. E. Sayenko, Moscow  
Scientific Research Laboratory of Viniculture, 4 pp

"Mikrobiologiya" Vol XIV, No 5, 1945

Spanish sherry film (solera) is a complex of Saccharomycetes, a part of which possesses a strong fermenting ability and forms the film after fermentation while the other part of Hansenula is not able to ferment but possesses etherizing peculiarities in the aerobic phase. When fermentation of wines with pure cultures isolated from solera takes place, the formed films accumulate acetaldehyde which, although giving a sherry taste, does not show typical taste harmony and bouquet of sherry. Experiments and comparison with other sherry yeasts are described.

PA50T51

SAYENKO, N.F.

"Complex Cultures of Yeast in Wine Making." Central Scientific Research Laboratory of Glavvino.

"Vinodelie i Vinogradarstove SSSR". Vol. 6, No.2, 1946, pp 12-15.

Pure cultures of *Saccharomyces ellipsoideus* and *S. apiculatus* were mixed in proportions of 1:1 - 1:40 for 24 - 96 hours. In large proportions *S. apiculatus* depressed the development of *S. ellipsoideus* and its fermenting activity of *S. apiculatus* stimulated the growth and activity of *S. ellipsoideus*. *S. apiculatus* increased volatile acids and ethers in the wine. The best wine was produced with *S. apiculatus* and *S. ellipsoideus* in the ration 1:10.

SO: W-327, 24, Mar. 1948.

PA4OT48

USSR/Medicine - Yeast  
Medicine - Symbiosis

Apr 1946

"Symbiosis of Grape Yeasts in Nature," N. F. Sayenko,  
Moscow Branch, "Magarach" All-Union Scientific Re-  
search Institute of Viticulture, 4 pp

"Mikrobiologiya" Vol IV, No 2

The yeasts *Saccharomyces ellipsoidens* and *Saccharomy-  
ces apiculatus* perish within a short time on undamaged  
ripe grapes due to combined action of temperature,  
sunlight and other factors. *S. ellipsoidens* are more  
resistant to the action of external factors than *S.  
apiculatus*. In damaged ripe grapes the yeasts are  
well preserved. In mixed cultures *S. apiculatus* pro-

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USSR/Medicine - Yeast (Contd)

Apr 1946

liferates at a higher rate and soon supplants *S.  
ellipsoidens*. This explains the prevalence of *S.  
apiculatus* on grapes and in fresh grape juice.

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40748

SAYENKO, N. F.

SAYENKO, N.F.

Xeres yeast [in Russian with English summary] Biokhim. vin. no.1:  
98-126 '47. (MLRA 7:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vinodel'cheskoy  
promyshlennosti (Yalta-Magarach).  
(Sherry) (Yeast)



SAYENKO N. F.

OPARIN, A.I.; KURSANOV, A.L.; SAYENKO, N.F.; BESINGER, E.N.

Biochemical processes in champagne during bottle aging [in Russian with English summary]. Biokhim.vin. no.1:134-157 '47. (MIRA 7:10)

1. Kafedra biokhimii rastenii Moskovskogo gosudarstvennogo universiteta imeni Lomonosova.  
(Champagne (Wine))

SALENKO, N. F.

Changes in the oxidation-reduction potential and chemical composition of wine when kept under yeast film. N. F. Salenko (All-Union Sci. Research Inst. Wine Ind., "Isag-arach", Crimea, Yalta). *Biokhim. Vinodeliya, Akad. Nauk S.S.S.R., Sbornik* 2, 86-100 (1948).—Several colonies of a 3-day-old culture of sherry-type fermentation yeast were transferred under sterile conditions into a flask contg. 10 l. of a light, dry, 2-year-old sherry wine. At the beginning of the expt., at the beginning of yeast growth (3-4 days), at the time of compact film formation (19 days), and each 14-15 days thereafter, the oxidation-reduction potential (Eh), e.m.f., pH, and chem. compn. of the wine were detd. From the 1st to the 65th day Eh decreased continuously from 480 to 268 mv., e.m.f. from 230 to 17 mv., pH from 22.99 to 15.43, alc. from 15.0 to 13.6% by vol., sugar from 0.24 to 0.18%, and volatile org. acids from 1.11 to 0.27 mg. %; on the other hand, AcH increased from 33.5 to 364.2 mg./l., acetal from 16.45 to 181.73 mg./l., and volatile org. esters from traces to 432.9 mg./l. The amt. of dissolved O (8.63 mg. % in the beginning) disappeared rapidly when a compact yeast film was formed on the surface. A slight decrease of the titratable acidity was observed only after the 33rd day (from 5.61 to 4.18 mg. % as tartaric acid), and pH increased slightly. A distinct sherry flavor and taste (revealed first on the 33rd day) corresponded to Eh 310 mv., pH 16.85, pH 3.19, acetal 113.63 mg./l., AcH 245.76 mg./l., and titratable acidity 5.61 mg. %. On the 66th day a fresh portion of wine equiv. to the amt. removed for the analyses (5 l.) was introduced under the film. The

OVER

fermentation continued by formation of AcH, flavor, and taste. However,  $E_h$  and pH moved into reversed direction, presumably due to a penetration of  $O_2$  through the disrupted film. The enzymes liberated by autolyzed old yeast cells activated free  $O_2$ , which in turn was responsible for the formation of high amts. of AcH (740.52) and acetal (175.82 mg./l.). Titratable acidity did not decrease any more when pH was less than 3.0; however, normal fermentation was proceeding. Addn. of reducing agents ( $NaHSO_3$ , 125 and AcH 100 mg./l.) lowered the original  $E_h$ , which was restored after 36 and 72 hrs., resp. Addn. of  $HCOOH$  (140 mg./l.) caused a slight increase of  $E_h$ . Addn. of  $HCOOH$  in different doses (from 28 to 240 mg./l.) did not affect  $E_h$ , while normal fermentation went on. It was concluded that sherry-type fermentation has no relation to  $E_h$  but depends entirely on the fermentative action of the yeast cells forming the film.

E. Wierbicki

| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
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| <div style="text-align: right;">16</div> <div style="text-align: left;">CA</div> <p>Use of gypsum in the production of sherry. N. P. Saenko and L. A. Solov'eva. <i>Vinodelia i Vinogradarstvo S.S.S.R.</i>, No. 5, 5-8(1948).--Gypsum (I) is needed only in wines developing pH above 3.5. The mechanism of reaction of I with tartrate-tartaric acid is discussed. Wine mash which contained 28% sugar was treated with various amts. of I and the pH detd. after 4 and 7 days and at the end of fermentation (25 days). Within the range studied (0.5-2.0 g./l.) pH values are apparently uniform regardless of the amt. of I added. For effective utilization of I in sherry production the entire winery should be equipped with potentiometers to enable rapid, accurate detn. of pH values in wine mash and wine, and hence the amt. of I required to keep the pH within limits yielding stable wines (optimum at pH 3.2-3.4). H. O.</p> |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |
| <div style="display: flex; justify-content: space-between;"> <div> <p>ASAC-32A METALLURGICAL LITERATURE CLASSIFICATION</p> <p>REGION 1</p> </div> <div> <p>REGION 2</p> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |

CA

16

Increased alcohol stability of sherry yeasts owing to their  
controlled adaptation. N. F. Sazko (Moscow Branch  
Inst. "Magarach"). *Vinodelio-Vinogradarstvo S.S.S.R.*  
40, No. 2, 23-6 (1950).—Adaptation expts. led to develop-  
ment of a strain growing well in a medium contg. 14.5 vol. %  
alc. and producing a satisfactory film at 17.5 vol. %.

H. Outfield

1951

SAYENKO, N.F.

Accelerating the formation of sherry yeast film in wines.  
N. F. Saenko (Inst. "Magarach," Moscow Branch),  
Vinozhenitsa, Vinogradarstvo S.S.S.R. 11, No. 1, 12-18,  
(1951).—The rate of formation of yeast film on the surface of  
wine depends on the amt. of N present in the wine.  $\text{NH}_4\text{OH}$   
added to a wine sample contg. a low amt. of N (194 mg./l.)  
increased the rate of film formation. The addns. of  
 $\text{NH}_4\text{OH}$  in the amts. of 10, 80, 60, 120, 200, 300, and 400  
mg. N/l. were effective, 120 mg. N/l. being the optimal  
dose. A compact yeast film was formed on the 7th day  
(3-4 days before control), and the wt. of the yeast mass  
increased 50-70%. The chem. characteristics (aldehydes  
and acetals) and the organoleptic qualities of the sherry  
type wines were also increased. The addns. of yeast au-  
tolyzates or amino acids to the raw products in the amt. of  
120 mg. N/l. produced a similar effect as the  $\text{NH}_4\text{OH}$  addn.  
However, biotin (2  $\gamma$ /l.) and vitamin B<sub>1</sub> were not very ef-  
fective, while  $(\text{NH}_4)_2\text{SO}_4$  (10, 30, 60, and 120 mg. N/l.)  
affected both the film formation and the wine quality.  
The addn. of  $\text{NH}_4\text{OH}$  (20% soln.) is recommended as a N  
supplement for the growth of sherry yeasts. For wines with  
pH 3.1-3.2 larger amts. (60-120 mg. N/l.) while for those  
with pH 3.3-3.4 smaller amts. (below 60 mg. N/l.) of  
 $\text{NH}_4\text{OH}$  will give optimal effects. E. Wierblecki

U S S R

Application of pure cultures of yeast in wine manufacturing. N. F. Saenko (Moscow Branch, Inst. "Magarach," Vinodeliya Vinogradarstva S.S.S.R. 12, No. 50-3 (1962)). -- Fresh musts contain large quantities of wild yeasts (in one instance as much as  $8.8152 \times 10^8$  yeast cells/ml.). Sulfitation (100 mg.  $\text{SO}_2/\text{l.}$ ) with a following storage of the musts at  $12^\circ$  for 12-18 hrs. reduces significantly the amt. of the wild-yeast cells present. Addn. of 1.5% suspension of a pure wine yeast culture to the sulfitized musts eliminates the participation of the residual amt. of the wild yeasts in the alc. fermentation. When must is fermented spontaneously by the yeasts naturally present in grapes the amt. of wild-yeast cells predominates during the first 2-4 days of the fermentation; however, when the alc. concn. in the must reaches 7 vol. % wild yeast disappear. The rate of formation of alc. is decreased when wild yeasts participate in the fermentation.

E. Wierbicki /

Physiobiochemical features of the development of sherry film and its use in production. N. M. Sisakyan, E. M. Popova, N. P. Saenko, M. A. Gerasimov, and M. G. Puchkova. *Biokhim. Vinodeliya, Sbornik* 4, 32-55(1953).— Investigation of biochem. processes of viniculture shows that there is a decrease in the wine of the vitamins of group B, suggesting that the vitamins are used by the yeast cells in the nature of an addnl. factor of nutrition. Previous observations have shown that the microorganisms of yeast are capable of absorbing vitamins from the surrounding media. Studies were made of (1) microbiol. observations on the intensity of growth and the development of sherry film and its morphological changes at the time of processing wine nitrogenous and bioactive substances; and (2) the biochem. and chem. processes underlying sherry formation. Results of the first tests show that the most favorable conditions for the development of the film is displayed by the mediums in which there has been the addn. of 0.5% yeast autolysis processed at a temp. of  $-180^{\circ}$ , 120 mg./l. ammonia N, and 0.4 mg./l. riboflavin. The amts. of aldehydes, and specifically acetal, are considerably increased in comparison with the control. A second set of tests was performed to eliminate the necessity of the  $-180^{\circ}$  temp. Wines were treated at  $-180^{\circ}$ ,  $-40^{\circ}$ ,  $-10^{\circ}$  (with a 5-fold

freezing and thawing technique); and holding at  $43^{\circ}$  for 48 hrs. Yeast in the control sample and in the heated sample generated very slowly. The best activity was noted with  $-180^{\circ}$  treatment with the activity decreasing with an increase in temp. After the treatment a rapid increase in the activity of esterase and peroxidase is noted. After preliminary lab. expts., tests were made in 5 large vats contg. (A) control wine, (B) wine + 0.5% maceration juice, (C) wine + 0.5% yeast autolysis product processed at a temp. of  $-180^{\circ}$ , (D) wine + 80 mg./l. ammonia N, (E) wine + 120 mg./l. ammonia N. All were carefully mixed and inoculated with a layer of sherry yeast No. 98. The condition of the plasma cells were noted at different stages of development of the film. The most rapid growth was observed in (C) and (E). During the first 60 days, the amt. of alc. decreases with the greatest decrease being shown by (B). A decrease in sugar and total and volatile acids is noted with an increase in aldehydes. It is possible to cause sherry formation by introducing to the original wine material other wine material rich in extractable substances, bioactive compounds in the form of maceration juice (I) or yeast autolysis product. Investigations indicate that the greatest effect is obtained by the addn. of I in combination with ammonia. S. B. Radding.



SAYENKO, N. F.

✓ Reducing the acidity of the grape must fermented by  
*Schizosaccharomyces moscovia*. N. F. Sienko and L. A.

Solov'eva. *Trudy Vsesoyuz. Inst. Vinodliya i Vinogradarstva* 4, 181-91 (1953); *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 2705.—The reduction in the acidity of the grape must fermented by *S. moscovia* is most pronounced during the first 3 days of fermentation and occurs primarily at the expense of malic acid. Optimum pH is between 3.5 and 4.2. The addn. of chalk is recommended. Malic, racemic, succinic, and acetic acids, salts of racemic acid and, to a degree, of citric acid constitute the source of C supply. B. S. L.

CH

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2. USSR (600)
4. Yeast
7. Continuous method for preparing yeast culture, Vin. SSSR, 13, No. 1, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

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2. USSR (600)
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7. Design of a vat for making sherry wine. Vin. SSSR 13, No. 4, 1953.

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DEBOGLAV, N.I.; CHISTOVICH, T.A.; KUDRYAVTSEV, V.I., retsenzent;  
SAYENKO, N.F., spetsial'nyy redaktor; MASLOVA, Ye.F., redaktor;  
GOTLIB, E.M., tekhnicheskiiy redaktor.

[Microbiological control of champagne production and the preparation  
of yeast starters] Mikrobiologicheskii kontrol' proizvodstva sham-  
panskogo i prigotovlenie drozhzhevykh razvodok. Moskva, Pishcheprom-  
izdat, 1954. 70 p. (MLRA 7:12)

(Champagne (Wine)) (Yeast)

SALENKO, N. F.

The causes of spoilage of the champagne upon "remuage."  
N. F. Saenko and V. S. Malorov (Moscow Branch Inst.  
"Magarich"). *Vinodelie i Vinogradarstvo S.S.S.R.* 16, No.  
5, 11-17(1958). --It was found that the structure of the ppt.  
plays an important role in the process of champagne proo-  
tion and is related to the correct ratio between the tannin  
and gluc. Conditions and causes of good and bad ppt.  
formation are discussed and exptl. analyses are tabulated.  
M. Charnandarian

2

SAYENKO, N. F.

USSR / Microbiology. Teshnical Microbiology.

F-3

Abs Jour: Ref Zhur-Biol., No 16, 1958, 72021.

Author : Sayenko, N. F.; Mayorov, V. S.

Inst : All-Union Scientific-Research Institute of Vini-  
culture and Viticulture.

Title : Factors Influencing the Formation of Yeast Deposit  
Structures in the Champagne Aging Process.

Orig Pub: Byul. nauchno-tekhn. inform. Vses. n.-i. in-t  
vinodeliya i vinogradarstva, 1957, No 1, 24-29.

Abstract: Along with physical and chemical reasons for the  
formation of yeast deposits with undesirable prop-  
erties for champagne production (adhesion, form-  
ation of coatings and networks), reasons of a  
biological character are noted: influence of  
products of wild yeasts and yeast-like organisms

Card 1/2

SAYENKO, N.F.

Methods of selecting sherry yeasts with regard to their alcohol tolerance. Trudy Inst. mikrobiol. no.10:96-102 '61. (MIRA 14:7)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya vodochnoy i spirtovodochnoy promyshlennosti Vsesoyuznoy sel'skokhozyaystvennoy akademii imeni Lenina.  
(SHERRY) (WINE AND WINE MAKING—MICRIBIOLOGY)

SAYENKO, Natal'ya Fedotovna, kand. biol. nauk; SMIRNOVA, M.K.,  
red.

[Sherry] Kheres. Moskva, Izd-vo "Pishchevaia promyshlen-  
nost'," 1964. 161 p. (MIRA 17:5)



SAYENKO, N.S.

Low capacity high pressure heater of fuel oil. Sakh. prom. 35  
no. 5:30 My '61. (MIRA 14:5)

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(Boilers)

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SO: Knizhnaya letopis' No 22, 1956

SEDOV, K.R.; VOSKRESENSKAYA, A.Ya.; SAYENKO, O.I.

Statistical data on the incidence of leukemia in Irkutsk Province.  
Probl. gemat. i perel. krovi 9 no.6:34-37 Je '64.

(MIRA 18:2)

1. Kafedra gospiatal'noy terapii (zav.- dotsent K.R. Sedov)  
i kafedra detskikh bolezney (zav.- dotsent A.I. Fel'dgun)  
Irkutskogo meditsinskogo instituta (dir.-prof. A.I. Nikitin).

SAYENKO, P. G. (Veterinary Doctor, Umansk District Veterinary Hospital,  
Ukranian SSR). (Abstracted by NOSKOV, A. I.)

"Benzene hexachloride dust - best remedy to eliminate scabies in swine".....  
Veterinariya, vol. 39, no. 3, March 1962

BALON, I.D., kand.tekhn.nauk; ROMANENKO, N.T., inzh.; YUPKO, L.D., inzh.;  
BOLKUNOV, Ye.P., inzh.; TULUYEVSKAYA, T.A., inzh.; ASTAFUROV, P.I., inzh.;  
VOLOVIK, A.V., inzh. Prinsipalni uchastiye: BAKAYEV, A.I.; VOKHNIK, A.R.;  
KOLOS, V.D.; KAYSTRO N.P. [deceased]; LITVINENKO, V.I.; MAKARCHENKO, N.M.;  
ONOPRIYENKO, V.P.; PALAGUTA, V.P.; PIKA, V.S.; RAGIN, B.I.; ROMANCHENKO,  
Ye.I.; SAYENKO, S.D.; STOLYAR, V.V.; SKORIK, N.M.; TOROPENKO, P.D.

Characteristics of making ferromanganese in large capacity blast furnaces  
and the effect of slag conditions on basic technical and economic indices.  
Stal' 23 no.12:1069-1073 D '63. (MIRA 17:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod "Zapo-  
rozhtal'".

ZEDGENIDZE, G.A.; CHERKASOV, V.F.; FILATOV, P.P.; YELASHOV, Yu.G.;  
CHERNYACHOVSKAYA, A.K.; SAYENKO, S.F.

Scientific research on radiobiology, clinical radiology and  
roentgenology conducted in the institutes of the Academy of  
Medical Sciences of the U.S.S.R. in 1964. Vest. AMN SSSR  
20 no.9:3-10 '65. (MIRA 18:11)

1. Institut meditsinskoy radiologii AMN SSSR, Obninsk.

SAYENKO, S.P.

25(5)

PHASE I BOOK EXPLOITATION

SOV/2425

Nudel'man, Moysey Grigor'yevich, and Semen Pavlovich Sayenko

Povysheniye proizvoditel'nosti truda pri mekhanicheskoy obrabotke detaley mashin (Increasing Labor Productivity in Machining Machine Parts)  
Kiyev, Mashgiz, 1959. 155 p. 5,000 copies printed.

Reviewer: V. P. Zavertaylo, Candidate of Technical Sciences; Eds.: V. E. Dumpe, Candidate of Technical Sciences, Docent, and M. S. Soroka; Chief Ed. (Yuzhniy Division, Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE: This book is intended for engineering and technical personnel and production innovators in machinery-manufacturing plants.

COVERAGE: The book discusses measures for improving production processes and reducing the time required for machining and support operations in the production of parts on a custom or lot basis. Problems related to parts inspection and the proper layout of equipment are dealt with. A method of calculating the efficiency of production processes is described. No personalities are mentioned. There are 15 references, all Soviet.

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Increasing Labor Productivity in Machining Machine Parts (Cont.)

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AVAILABLE: Library of Congress

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10-30-59

SAYENKO, I. V.

The preparation of phosphopyruvic acid. V. A. Belitsky and I. V. Sayenko (Inst. Biochem., Acad. Sci. Ukr.S.S.R., Kiev). *Ukrain. Biokhim. Zhur.* 18, 211-13 (in Russian 211); in English, 213 (1946). — Ba phosphoglycerate (3.97 g.) and 7 cc. 2N HNO<sub>3</sub> are dissd. with water to a vol. of 30 cc. and heated to 60°. The soln. is treated with 20% Na<sub>2</sub>SO<sub>4</sub> soln. to remove Ba ions, filtered, and neutralized with 2N NaOH against bromothymol blue. The resulting soln. of phosphoglyceric acid (60 cc.) is mixed with 6 cc. 1.3% Na<sub>2</sub>CO<sub>3</sub> soln. and 18 cc. water, incubated for 5 min. with dried yeast at 60°, the proteins pptd. with 12 cc. 80% AcOH, the filtrate neutralized with 2N NaOH against phenolphthalein, and Ba acetate added. The addn. of 63 cc. 0.1N AgNO<sub>3</sub> at 50° yields phosphopyruvic acid as the Ag-Ba salt. Treatment with HCl gives a soln. of the Ba salt (AgCl pptg.), which can be pptd. in 25% yield from the filtered soln. by the addn. of HCl.

Werner Jacobson

MS 211

SA YENKO, J. V.

The interaction between the barium salts of phosphoglyceric and phosphopyruvic acids. T. V. Saenko (Inst. Biochem., Acad. Sci. Ukr. S.S.R., Kiev). *Ukrain. Biochim. Zhur.* 18, 215-20 (in Russian, 220; in English, 220-1) (1946).—Ba phosphoglycerate can be separated with difficulty from Ba phosphopyruvate (I). These substances always precipitate together, and selective extraction with water or weak acids is bound to fail. If e.g., 2 cc. of a neutralized solution of 0.750 mg. of phosphoglyceric acid (II) and 0.490 mg. of phosphopyruvic acid (III) are treated with 2.50 mg. (AcO)<sub>2</sub>Ba then, upon addition of 2.5 mg. Na<sub>2</sub>SO<sub>4</sub>, no precipitation will occur. Thus one must assume the presence of a complex salt which is not readily dissociated. The following structures are suggested:  $\text{ROP}(\text{O})\text{OBaOP}(\text{O})\text{R}^1$

and  $\text{ROP}(\text{O})\text{OBaOCH}:\text{R}^1$ , where R is the radical of III, and R<sup>1</sup> is the radical of II.

Werner Jacobson

*W. Jacobson*

SAYENKO, I. V.

The particle shape of denatured globular protein. I. V. Sayenko (Biochem. Inst., Acad. Sci. Ukr. S.S.R., Kiev). *Ukrain. Biokhim. Zhur.* 24, 196-202 (in Russian, 202-3) (1952).—Denaturation is usually accompanied by secondary processes, including aggregation, which must be excluded in order to characterize denaturation. S. considers the following factors to be unfavorable for aggregation: (1) high elec. charge on the mol., (2) minimal electrolyte in soln., (3) low protein concn. S. detd. that when thoroughly dialyzed albumin is brought to pH 9.8, if at the moment of heat denaturation the concn. of albumin is not very high (2% for serum albumin and 0.5% for egg albumin), denaturation will then proceed without considerable increase in soln. viscosity. Thus, the prevalent concept that increasing vis-

cosity is a pos. sign of albumin denaturation was not confirmed, the increase in viscosity not being connected with the denaturing process itself but rather with aggregation. Viscosity vs. albumin concn. curves indicated that intermol. reaction is sharply increased in denatured albumin solns. (viscosity increasing rapidly though not proportionally with increased albumin concn.). Aggregation tendency was greater for denatured egg albumin particles than for denatured serum albumin. Detn. (by viscosity) of the axial ratios of serum and of egg albumin mols., denatured by heat under conditions excluding aggregation indicated that the mols. in general possess the same degree of asymmetry after denaturation as the native mols. Method: Serum albumin of the bull and cryst. egg albumin, as solns., were first freed from neutral salts by thorough dialysis and the reaction brought to pH 9.8, 2%, 1%, and 0.5% solns. and less being investigated. The solns. were heated on a water bath at 98° for 5 min., and after cooling NaCl was added to a concn. of 0.15M, to remove the electroviscous effect. Corresponding detns. were carried out on native albumins. Specific viscosity was detd. from viscosity measurements and the axial ratios for the albumin mols. obtained by using a graph according to the calcns. of Simha (*C.A.*:34:1535). Specific viscosity values for native and denatured albumins were 0.059 and 0.081, resp., and the axial ratios for native albumin and denatured, 6.4:1 and 6.8:1, resp., calcd. on the basis of dry albumin. Specific viscosity increased in proportion to the concn. of albumin in soln., up to 1%, beyond which it was disproportionately high, while for native albumin the proportionality was observed for all ranges of concn. studied, which indicated that the intermol. action is greater in denatured than in native albumin.

Clayton F. Holoway

SAYENKO, T.V.

Properties of globular proteins denatured without aggregation. Ukrain.  
Biokhim. Zhur. 25, No.1, 42-53 '53. (MLRA 6:5)  
(CA 47 no.22:12439 '53)

1. Biochem. Inst., Kiev.

SAYENKO, T. V.

✓ Peptic hydrolyzate and its possible utilization in parenteral and peroral nutrition. A. L. Loseva and T. V. Saenko (Inst. Biochem., Acad. Sci. Ukr. S.S.R., Kiev). *Ukrain. Biokhim. Zhur.* 27, 131-5 (Russian summary, 136) (1965).— The enzyme (pepsin) was prepd. by the method of Tsiprovich. A given vol. of blood serum is dild. with an equal vol. of distd. H<sub>2</sub>O, acidified to pH 6 with HCl to coagulate the proteins, and placed in a boiling water bath to bring about syneresis. It is then filtered and washed on a Büchner funnel with HCl soln. of pH 5.5-5.8. Distd. H<sub>2</sub>O is added to the washed coagulate to a vol. equal to that of the original serum. 2.0 ml. HCl (d. 1.12) and 2.0 ml. of the pepsin prepn. is then added for each 100 ml. vol. and incubated at 5-8°. The protein concn. is approx. 4.0%, and the pH of the medium 2.3. Proteolysis was allowed to proceed for various time intervals up to 87 days. Hydrolyzate to be tested was neutralized with 48% NaOH, passed through a Seitz filter for sterility, and measured out and sealed in glass ampuls stored at 5-8°. Rats and rabbits were used as the test animals. The hydrolyzate proved to be free from the

unpleasant taste characteristic of proteolyzates prepd. by the usual methods and possessed an adequate food value. After 5-9 days of incubation (at 5-8°) the proteolyzate was free from toxic effects. After 11-15 days toxic effects have appeared. All hydrolyzates were free from anaphylactic-producing effects.

H. S. Levine

SHYENKO, T. V.

✓ The protease properties of gastric juice. K. T. Kotkova and T. V. Saenko (Inst. Biochem., Acad. Sci. Ukr. S.S.R., Kiev). *Ukrain. Biokhim. Zhur.* 27, 168-77 (Russian summary, 177) (1955).—Contrary to the results reported by Preudenburg (C.A. 33, 1463) and by Buchs (*Die Biologie des Magenkalpsins*, 1947 C.A. 41, 3149f) it was found that the 2 optimal pH points seemingly disclosed in gastric digestion, one for the peptic and the other for the catheptic activity, were due to the use of 2 types of acids, HCl and AcOH, in the detn. of pH in the 0.1-4.0 range. When HCl alone was used a monooptimal curve was obtained, whether serum or egg albumin was being hydrolyzed. The observation that pepsin is more easily adversely affected by heat than cathepsin was not confirmed as tested at 70°. The loss in proteolytic activity due to heating was not accompanied by changes in the nature of the curve of relation between proteolytic activity and pH values. The reported observation that the proteolytic activity of human or animal gastric juice can be increased by the addn. of H<sub>2</sub>S.

HCN, or ascorbic acid likewise could not be verified. The conclusions of P. and B. that 2 types of proteolytic processes (peptic and catheptic) are present in gastric juice or exts. of gastric mucosa found no substantiation in the results of these expts.

B. S. Levine

①



~~SAYENKO, T.V.~~  
~~527/12/10, 1/1.~~

✓ Changes in the nature of native and chemically modified exogenous serum proteins following their parenteral injection into the organism. K. I. Kotkova and T. V. Saenko (Inst. Biochem., Acad. Sci. Ukrain. S.S.R., Kiev). *Ukrain. Biochim. Zhur.* 27, 335-41 (1955) (Russian summary 341).  
Bovine serum and  $I^{125}$ -treated and modified protein prepn.

CH

A and B were injected into rabbits parenterally and a comparative study was made of the duration of their persistence in the circulatory system and the rate of their absorption by the body tissues. Prepn. A was an electrophoretically homogeneous blood protein; it was chemically treated so that it lost all its original antigenic properties. Prepn. B consisted of two electrophoretically different components of bovine blood serum, which had retained the greater part, but not all of the original antigenic properties. The  $I^{125}$ -treated bovine blood serum remained in the circulation the longest. Protein prepn. B persisted in the circulation next longest, and prepn. A the shortest time. The radioactivity of the tissue proteins (liver, lungs, etc.) following the parenteral injection into rabbits of the  $I^{125}$ -protein prepn. A and B was generally low, being of a somewhat higher intensity in the case of prepn. A. B. S. Levine

①

SAYENKO, T.V.

BELITSER, V.A.; SAYENKO, T.V.

Effect of acid and alkali on egg albumin [with summary in English]  
Biokhimiia 22 no.1/2:274-282 Ja-F '57. (MLRA 10:7)

1. Institut biokhimii Akademii nauk Ukrainiskoy SSR, Kiyev.  
(EGG WHITE,  
eff. of acids & alkali (Rus))

SAYENKO, T.V.; BELITSER, V.A.

Salting out egg albumin in an acidic medium [with summary in English]  
Ukr.biokhim.zhur. 29 no.3:347-353 '57. (MLRA 10:9)

1. Institut biokhimii Akademii nauk Ukrainaskoy SSR, Kiyev.  
(ALBUMINS) (PRECIPITATION (CHEMISTRY))

SAYENKO, T.V.

SAYENKO, T.V.

Iz protein denaturation attended by splitting processes? [with  
summary in English]. Ukr.biokhim.zhur. 29 no.4:387-391 '57.  
(MIRA 11:1)

1. Institut biokhimii AN URSR, Kiiiv.  
(PROTEINS)

KUCHERENKO, Ye.T. [Kucherenko, IE.T.]; SAYENKO, V.A. [Saenko, V.A.]

Hindered type of discharge with electron oscillations in a magnetic field. Ukr. fiz. zhur. 9 no.8:914-916 Ag '64.

(MIRA 17:11)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

KUCHERENKO, Ye.T.; SAYENKO, V.A.; AKHTYBSKAYA, Ye.V.

Nature of a reflector discharge in a magnetic field. Radiotekh. i elektron. 10 no.10:1873-1879 0 '65. (MIRA 18:10)

1. Kiyevskiy gosudarstvennyy universitet im. T.G.Shevchenko.

KUCHERENKO, Ye.T.; SAYENKO, V.A.

Study of the energy spectrum of ions from a magnetic source.  
Radiotekh. i elektron. 10 no.10:1916-1918 0 '65.

(MIRA 18:10)

L 14948-66 EWT(1) : AT

ACC NR: AP5026914

SOURCE CODE: UR/0109/65/010/010/1916/1918

AUTHOR: Kucherenko, Ye. T.; Sayenko, V. A.

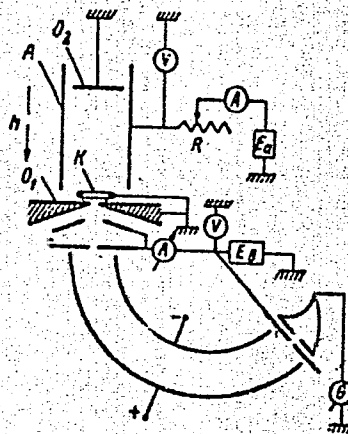
ORG: none

TITLE: Investigation of the energy spectrum of ions from a magnetic source

SOURCE: Radiotekhnika i elektronika, v. 10, no. 10, 1965, 1916-1918

TOPIC TAGS: ion source, magnetic ion source

ABSTRACT: An investigation (completed in 1962) of the energy spectrum of the ions delivered by a constrained-discharge magnetic source is reported. The ions were extracted by cathode K which was represented by a tungsten spiral with an average diameter of 10 mm. Reflectors  $O_1$ ,  $O_2$ , and anode A were made from tantalum. Exit aperture diameter was 3 mm; anode diameter, 30 mm; discharge-chamber length, 35 mm. A cylindrical symmetrically-fed capacitor was used for analyzing energies. With a pressure of  $10^{-3}$  torr in the source, a pressure of  $(2-3) \times 10^{-5}$  torr was maintained in the analyzer chamber. A plot of ion current vs. magnetic-field strength shows several pronounced peaks within



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UDC: 537.562 621.385.00



L 14948-66

ACC NR: AP5026914

40—90 oe; later, the curve falls off gradually. Also, typical curves of energy distribution of ions are presented. Orig. art. has: 3 figures.

SUB CODE: 20 / SUBM DATE: 03Jan64 / ORIG REF: 005 / OTH REF: 004

Card 2/2

80

L 4553-66 EWT(1)/ETG/EPF(n)-2/ENG(m)/EPA(w)-2 IJP(c) AT  
 ACCESSION NR: AP5020688 44,55 UR/0185/65/010/008/0838/0843  
 AUTHORS: Kucherenko, Ye. T.; Sayenko, V. A. 44,55 52  
 119

TITLE: Low-frequency oscillations in the plasma of a reflex discharge 21,44,55

SOURCE: Ukrayins'kyy fizychny zhurnal, v. 10, no. 8, 1965, 838-843

TOPIC TAGS: plasma oscillation, discharge plasma, ionized plasma

ABSTRACT: Coherent oscillations with a frequency of  $10^6$  cps, appearing in a reflex discharge with a hot cathode at pressures  $p < 10^{-3}$  mm Hg, are investigated for two types of discharge gap, one with a moving reflector. The frequency of the investigated oscillations did not depend on the probe potential, the discharge current and pressure, but depended strongly on the length of the discharge gap, the type of gas, the electron temperature, and the magnetic field intensity. The observed dependence of the frequency and amplitude of the oscillations on the magnetic field is related to the static features of the dis-

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L 4553-66

ACCESSION NR: AP5020688

charge. In discharges with electron oscillations at low pressures there exists a series of values of the magnetic field for which non-uniformly distributed densities of fast electrons emitted from the cathode are set up along the axis of the discharge. A series of maxima and the doubling of the oscillation frequency on going from the first to the second amplitude maximum indicates that at a magnetic field intensity  $H = H_n$  conditions are most favorable for exciting oscillations of the  $n$ -th harmonic. This leads to an amplitude and frequency dependence of the oscillations on  $H$ . The explicit dependence of the frequency on the magnetic field which for small  $n$  is given by the same straight line independent of the size of the discharge gap is confirmed experimentally. The slope of this line, however, differs from the calculated slope, since the assumption was made in deriving it that the fast electrons are emitted from the cathode perpendicular to its surface and parallel to  $H$ . This assumption is incorrect for the toroidal cathode investigated. The slope for a plane cathode coincides with the calculated value. Orig. art. has: 3 formulas and 4 figures.

Card 2/3

L 4553-66

ACCESSION NR: AP5020688

ASSOCIATION: Kyivskiy derzhuniversytet im. T. H. Shevchenka  
[Kievskiy gosudarstvennyy universitet im. T. G. Shevchenko] (Kiev  
State University)

SUBMITTED: 16Sep64

ENCL: 00

SUB CODE: ME

NR REF SOV: 008

OTHER: 005

Card

3/3

SALENKO, V.G., kand.tekhn.nauk; BORTNIK, Ya.M., inzh.

Economic evaluation of the increase in the quality of an  
electric locomotive. Vest.mashinostr. 44 no. 2:71-73  
F '64. (MIRA 17:7)

SAYENKO, V.G., kand. tekhn. nauk; KOFF, I.L., inzh.

Calculation of the economic efficiency of power systems using  
electronic computers. Energomashinstroenie 11 no.8:34-37 Ag '65.

(MIRA 18:10)

SAYENKO, V.A.; ARNAUTOV, V.A.; KOFF, I.L.

Algorithmization of the calculations of economic efficiency of  
standards for machine parts and units. Standartizatsiia 29  
no.2:59-63 F '65. (MIRA 18:4)

SAYENKO, V.G., kand.tekhn.nauk, dots.

Determining the time in which the investment pays for itself in  
comparing the various types of new equipment. Trudy MIIT no.129:50-  
52 '60. (MIRA 13:11)

(Railroads—Finance)



S/057/63/033/002/004/023  
B108/B186

AUTHORS: Zinchenko, N. S., and Sayenko, V. I.

TITLE: Calculation of the potential distribution in the system  
cylindrical electron beam - constant electrostatic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 2, 1963, 154-163

TEXT: The potential distribution in an electron-optical system is calculated. The potential  $V$  at any point is the amount that the linear potential  $V_L$  between the electrodes differs from the potential

$V_p(r, z) = \sum_n V_n(r) Q_n(z)$  produced by the space charge of the electron beam.

This leads to solving a boundary value problem for the two regions  $0 \leq r \leq r_0$ ,  $j_e \neq 0$  and  $r_0 \leq r < \infty$ ,  $j_e = 0$  ( $r_0$  is the radius of the beam), with the condition  $V_p/V_L \ll 1$ . The current that can be reached in the beam is estimated. The whole calculation is illustrated by a numerical example. There are 2 figures.

Card 1/2

Calculation of the potential ...

S/057/63/033/002/004/023  
B108/B186

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR, Khar'kov  
(Institute of Radiophysics and Electronics AS UkrSSR,  
Khar'kov)

SUBMITTED: February 14, 1962

Card 2/2

3(4)

SOV/154-59-2-4/22

AUTHOR: Sayenko, V. Kh., Docent, Candidate of Technical Sciences

TITLE: On the Development of Geodetic Instruments for the Solution of Some Problems Connected With Engineering Research on Airfields (O razrabotke geodezicheskikh instrumentov dlya resheniya nekotorykh zadach pri inzhenernykh izyskaniyakh aerodromov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1959, Nr 2, pp 25 - 31 (USSR)

ABSTRACT: The present paper describes the demands made on geodetic instruments and illustrates some designs intended to improve existing instruments or to introduce new ones. 1) Pilot wire: multiwire elastic steel cable with a diameter of 2-3 mm and 200 m long with fixed marks in the intervals required. Phosphorescent marks may be applied to the wire cable during nighttime. The author regrets that no such pilot wires are produced industrially, and each division has to make them on its own, 2) inclinometer: this must be light, portable (not bigger than a field glass and must be suited for the measure-

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On the Development of Geodetic Instruments for the  
Solution of Some Problems Connected With Engineering  
on Airfields

SCV/154-59-2-4/22

ment of inclinations by hand or by an easily collapsible tripod with an accuracy of  $\pm 0.001$  within the limits of  $\pm 0.100$ . It must feature a telemeter for the measurement of distances up to 200 m with an accuracy of  $\pm 0.01$ . It would be advisable to have also a compass fitted in (with an accuracy of  $\pm 1^\circ$ ). One of the possible variants of such an inclinometer without compass was developed and built by the author and his collaborators. The respective scheme is shown in figure 2.

3) Measuring table unit: the existing measuring table units KB, KB-1 and KShV are too heavy and inconvenient. A measuring table plate of the carrier type would be more suitable. To get the measuring table in the working position quickly, it is advisable to fasten the plate to the measuring table by means of a bowl gudgeon and to fit a round level, a compass and a measuring tape for the measurement of the instrument height into the plate. The alidade must show the inclinations and not the degrees. This makes it possible to check the admissibility of the inclinations directly without tables, 4) theodolites. Not all are equipped for nocturnal operation. A

Card 2/4